

ROUTING RECORD			
DATE	FROM	TO	ACTION
4-8-97	SC	ST	TZ
5-15-97	JP	PLS	Issue PC-PD
5-20-97	SC	PLS	PC-PD
REFERENCE TO OTHER APCD RECORDS INCLUDING VARIANCES			

90280
LC/K

[Handwritten signature]

F 7257

ARMCO
5141 FIRESTONE PL
SOUTH GATE

P/C

APPL # 326548
I.D. # 499

Date: 03/21/97 /

SA ✓
RB ✓
ETS ✓

326548

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

Permit No.
F7257
A/N 326546

PERMIT TO CONSTRUCT/OPERATE

Page 1

This
If th

Legal Owner
or Operator

ARNCO
5141 FIRESTONE PL
SOUTH GATE, CA 90280-3550

ID 000499

Equipment Location: 5141 FIRESTONE PL, SOUTH GATE, CA 90280-3550

Equipment Description:

BLENDED TANK, NO. FC1, POLYURETHANE, PFAUDLER, SERIAL NO. E-378-0386, 200-GALLON CAPACITY, 3'-6" DIA. X 4'-0" H., JACKETED, WITH ONE 2-HP. AGITATOR.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THE TOTAL QUANTITY OF INORGANIC ARSENIC EMITTED TO THE ATMOSPHERE FROM THE PROCESSING OF RAW MATERIALS IN THIS EQUIPMENT, AND THE EQUIPMENT UNDER PERMIT NUMBER F7256, SHALL NOT EXCEED 0.004 POUNDS IN ANY ONE CALENDAR YEAR.
4. THE TOTAL QUANTITY OF CADMIUM EMITTED TO THE ATMOSPHERE FROM THE PROCESSING OF RAW MATERIALS IN THIS EQUIPMENT, AND THE EQUIPMENT UNDER PERMIT NUMBER F7256, SHALL NOT EXCEED 0.008 POUNDS IN ANY ONE CALENDAR YEAR.
5. THE TOTAL QUANTITY OF HEXAVALENT CHROMIUM EMITTED TO THE ATMOSPHERE FROM THE PROCESSING OF RAW MATERIALS IN THIS EQUIPMENT, AND THE EQUIPMENT UNDER PERMIT NUMBER F7256, SHALL NOT EXCEED 0.0002 POUNDS IN ANY ONE CALENDAR YEAR.
6. MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS USED IN THIS EQUIPMENT SHALL BE KEPT CURRENT, AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
7. RAW MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY COMPOUNDS IDENTIFIED AS CARCINOGENIC AIR CONTAMINANTS IN RULE 1401, AS AMENDED ON DECEMBER 7, 1990, WITH THE EXCEPTION OF INORGANIC ARSENIC, CADMIUM AND HEXAVALENT CHROMIUM, AS SPECIFIED IN CONDITION NOS. 3, 4 AND 5 ABOVE.

FILE COPY

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

Permit No.
F7257
A/N 326546

PERMIT TO CONSTRUCT/OPERATE

Page 2

- 8 THE OPERATOR SHALL KEEP ADEQUATE RECORDS TO SHOW COMPLIANCE WITH CONDITION NOS. 3, 4 AND 5 IN A FORMAT APPROVED IN WRITING BY THE EXECUTIVE OFFICER. SUCH RECORDS SHALL BE RETAINED FOR A PERIOD OF TWO YEARS, AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

Dorris M. Bailey

By Dorris M. Bailey/jp
5/20/1997

FILE COPY



APPLICATION FOR PERMIT TO CONSTRUCT AND PERMIT TO OPERATE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
P.O. BOX 1944
Diamond Bar, California 91765-0944

FORM 400A

COMPANY INFORMATION

LEGAL NAME OF APPLICANT ARNCO	REG/NOV NUMBER INS/NOV ISSUE DATE 9/5/27/63/9/67
PERMIT TO BE ISSUED TO (SEE INSTRUCTIONS) ARNCO	
BUSINESS MAILING ADDRESS 5141 FIRESTONE PLACE SOUTH GATE, CA 90280	
TYPE OF ORGANIZATION <input type="checkbox"/> CORPORATION <input checked="" type="checkbox"/> INDIVIDUAL <input type="checkbox"/> LIMITED PARTNERSHIP <input type="checkbox"/> GENERAL PARTNERSHIP <input type="checkbox"/> GOVERNMENT ENTITY <input type="checkbox"/> OTHER	
ARE YOU A SMALL BUSINESS? (SEE INSTRUCTIONS) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IS YOUR BUSINESS 51 PERCENT OR MORE OWNED/CONTROLLED BY INDIVIDUAL? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
ARE ALL FACILITIES UNDER SAME OWNERSHIP IN CALIFORNIA IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL AIR QUALITY CONTROL RULES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
ARE YOU THE OWNER OF THE EQUIPMENT UNDER THIS APPLICATION? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	ARE YOU OR S.S. NUMBER OF THE OWNER 9/5/27/63/9/67
IF NO, ENTER LEGAL NAME OF OWNER	

FACILITY INFORMATION

FORMER NAME/LOCATION 5141 FIRESTONE PL SOUTH GATE CA 90280	FACILITY NAME ARNCO
NUMBER/STREET 5141	FACILITY ID NUMBER (SEE INSTRUCTIONS) 000499
CITY OR COMMUNITY SOUTH GATE	ZIP CODE 90280
CONTACT PERSON AND TITLE JOE NEGREY, Plant Mgr	CONTACT TELEPHONE NUMBER 213 249-7500
TYPE OF BUSINESS AT THIS FACILITY POLYURETHANE MFG	NUMBER OF EMPLOYEES AT THIS FACILITY 25
BUSINESS TYPE CODE (SEE INSTRUCTIONS) 2821	IS THERE A SCHOOL WITHIN 1,000 FEET OF YOUR PROPERTY? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

EQUIPMENT INFORMATION

EQUIPMENT DESCRIPTION (SEE INSTRUCTIONS) BLENDER, 200 GAL., JACKETED, BLENDING VESSEL, E-376-0386	SERIAL # 376-0386
APPLICATION FOR (SEE INSTRUCTIONS) <input checked="" type="checkbox"/> NEW EQUIPMENT <input type="checkbox"/> EXISTING EQUIPMENT OPERATING WITH/ON PERMIT <input type="checkbox"/> EXISTING EQUIPMENT WITH EXPIRED PERMIT	ARE YOU SUBMITTING MULTIPLE APPLICATIONS FOR EQUIPMENT IDENTICAL TO THAT DESCRIBED ABOVE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<input type="checkbox"/> MODIFICATION <input type="checkbox"/> CHANGE OF LOCATION <input type="checkbox"/> CHANGE OF PERMITTEE <input type="checkbox"/> CHANGE OF PERMIT CONDITION	
HAVE YOU BEEN ISSUED A NOTICE TO COMPLY WITH OR A NOTICE OF VIOLATION INFO FOR THIS EQUIPMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	HOW MANY PERMANENT OR FULL TIME JOBS WERE CREATED BY THE ADDITION OF OR MODIFICATION TO THIS EQUIPMENT 1
NO NUMBER NEW NUMBER NOTICE ISSUE DATE	
IF THE EQUIPMENT HAS A PREVIOUS WRITTEN PERMIT, STATE NAME OF PERMITTEE N/A	PREVIOUS PERMIT NUMBER
FOR NEW CONSTRUCTIONS OR MODIFICATION, ENTER ESTIMATED COST OF BASIC EQUIPMENT \$ 10,000	AIR POLLUTION CONTROL EQUIPMENT \$ 0
FOR NEW CONSTRUCTION OR MODIFICATION, ENTER ESTIMATED START DATE	ESTIMATED COMPLETION DATE 4/4/97
FOR CHANGE OF PERMITTEE, LOCATION OR CONDITION, ENTER DATE OF OCCURRENCE	FOR EXISTING EQUIPMENT IN OPERATION WITHOUT PERMIT, ENTER INITIAL OPERATION DATE
FOR THIS PROJECT, HAS A CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DOCUMENT BEEN REQUIRED BY ANOTHER GOVERNMENTAL AGENCY? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
IF YES, ENTER NAME AND SUBMIT A COPY IF APPROVED	
DO YOU CLAIM CONFIDENTIALITY OF DATA? (SEE INSTRUCTIONS) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

I HEREBY CERTIFY, UNDER PENALTY OF PERJURY, THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION ARE TRUE AND CORRECT.		OFFICIAL TITLE OF SIGNER Plant Manager	
SIGNATURE JOE NEGREY		TELEPHONE NUMBER 213.249.7500	DATE 21 MAR 97
TYPE OR PRINT NAME OF SIGNER JOE NEGREY			
APPLICATION NUMBER 326546	EQUIPMENT CATEGORY NUMBER 2851001	ASSIGNMENT UNIT ENGINEER	CLASS I II
ENGR. NO. 32697 DRH	ENGR. NO. 0	FEE SCHEDULE \$	VALIDATION 3/21/97 AL
ENGR. DATE 3/21/97	ENGR. INITIAL AL	CHECK OR MONEY ORDER NUMBER 053904	AMOUNT 923.00

DISTRIBUTION: WHITE - ENGINEERING CANARY - COMPLIANCE PINK - APPLICANT

1982

SCAQMD COMPUTER ASSISTED PERMIT PROCESSING (CAPPS)

AEIS DATA SHEET

Company Name : ARNCO
Equipment Address : 5141 FIRESTONE PI, SOUTH GATE, CA 90280

Facility ID : 000499

APPLICATION NUMBER : 326546
ESTIMATED COMPLETION DATE : 4/04/1997
EQUIPMENT TYPE : BASIC
EQUIPMENT DESCRIPTION : POLYURETHANE BLENDING

EQUIPMENT B-CAT : 285100
EQUIPMENT C-CAT : 00

EMITTANTS	EMISSIONS	
	R1 (LB/HR)	R2 (LB/HR)
PM	040	040
ROG	000	000
TOG	000	000

APPLICABLE RULES

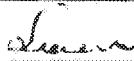
402 401

WEEKS/YEAR: 51	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Daily Start Times:	8:00	8:00	8:00	8:00	8:00	:	:
Daily Stop Times:	16:00	16:00	16:00	16:00	16:00	:	:

User's Initials: JP

Date: 5/15/1997

Supervisor's Name:



Review Date: 5/26/97

PAGE # 1

FORM CAPPS-200A

SCAQMD COMPUTER ASSISTED PERMIT PROCESSING (CAPPS)

FEE DATA - SUMMARY SHEET

Application No : 326546
Previous Permit No:

IRS/SS No: 952-63-6700
Previous Application No:

Company Name : ARNCO Facility ID: 000499
Equipment Street: 5141 FIRESTONE PL, SOUTH GATE, CA 90280
Equipment Desc.: POLYURETHANE BLENDING
Equipment Type : BASIC Fee Charged by: B-CAT
B-CAT NO. : 285100 C-CAT NO. : 00 Schedule: B
Facility Zone : 1 Deemed Compl. Date: 3/26/1997 PUBLIC NOTICE: NO

APPLICATION FILING FEE (PRIOR TO 7/1/90 & PLANS FEE) \$ 0.00
EVALUATION FEE PRE-PAID (POST 7/1/90) \$ 738.40

Evaluation Type: PERMIT TO CONSTRUCT/OPERATE (PC/PO) Small Business?: NO
Disposition : APPROVE PC/PO P/O NO P/C Penalty?: NO
Reference App. No: Similar Permit Unit?: NO

1. PERMIT PROC. FEE* (APPL FILED PRIOR TO 7/1/90) SUMMARY PERMIT		
FEE RATES * \$	LESS FILING FEE PAID \$ \$ 0.00
2. EIR		\$ 0.00
3. AIR QUALITY ANALYSIS (TABLE II FEE)		\$ 0.00
4. HEALTH RISK ASSESSMENT (TABLE II FEE)		\$ 0.00
5. SIGNIFICANT PROJECT REVIEW (TABLE II FEE)		\$ 0.00
6. SOURCE TEST REVIEW: (RULE 306(i) FEE) \$409.6 +		
[NO HRS @ \$76.81/HR] (MAX. \$1561.8)		\$ 0.00
7. CEMS REVIEW (TABLE II FEE)		\$ 0.00
8. TIME AND MATERIALS (FOR PLAN APPLICATIONS ONLY)		
0.00 HRS @ \$ 76.81/HR		\$ 0.00
9. PERMIT PROCESSING FEE ADJUSTMENT** ADDITIONAL FEE		
TABLE I FEE* \$ 738.40 LESS EVAL. FEE PAID \$ 738.40 ...		\$ 0.00
10. OTHER FEES** (INCLUDING CANCELLATION)		\$ 0.00
	TOTAL:	\$ 0.00

COMMENTS:

Recommended By: JP DATE: 5/15/1997 REVIEWING ENG: Suresh DATE: 5-20-97

* ADJUSTED FOR SMALL BUSINESS, IDENTICAL EQUIPMENT, AND P/O NO P/C PENALTY

** ADJUSTED FOR INCORRECT FEE SUBMITTAL, SMALL BUSINESS, IDENTICAL EQUIPMENT, AND P/O NO P/C PENALTY

N S R D A T A S U M M A R Y S H E E T

Application No: 326546
Application Type: Permit to Construct
Application Status: PENDAPPRV
Previous Apps, Dev, Permit #: NONE

Company Name: ARNCO
Company ID: 499
Address: 5141 FIRESTONE PL, SOUTH GATE, CA 90280-35
RECLAIM: NO
RECLAIM Zone: 01
Air Basin: SC
Zone: 1
Title V: NO

Device ID: 0 -
Estimated Completion Date: 04-04-1997
Heat Input Capacity: 0 Million BTU/hr
Priority Reserve: NONE - No Priority Access Requested
Recommended Disposition: 31 - PERMIT TO OPERATE GRANTED
PR Expiration:
School Within 1000 Feet: NO
Operating Weeks Per Year: 51
Operating Days Per Week: 5
Monday Operating Hours: 08:00 to 16:00
Tuesday Operating Hours: 08:00 to 16:00
Wednesday Operating Hours: 08:00 to 16:00
Thursday Operating Hours: 08:00 to 16:00
Friday Operating Hours: 08:00 to 16:00
Saturday Operating Hours: : to :
Sunday Operating Hours: : to :

Company ID: 499 Application No: 326546

Page #2

Emittant:	ARSENIC
BACT:	
Cost Effectiveness:	NO
Source Type:	MINOR
Emis Increase:	0
Modeling:	N/A
Public Notice:	NA
CONTROLLED EMISSION	
Max Hourly:	0.00 lbs/hr
Max Daily:	0.00 lbs/day
UNCONTROLLED EMISSION	
Max Hourly:	0.00 lbs/hr
Max Daily:	0.00 lbs/day
CURRENT EMISSION	
BACT 30 days Avg:	0.00 lbs/day
Annual Emission:	0.00 lbs/yr
District Exemption:	None

Emittant:	CADMIUM
BACT:	
Cost Effectiveness:	NO
Source Type:	MINOR
Emis Increase:	0
Modeling:	N/A
Public Notice:	NA
CONTROLLED EMISSION	
Max Hourly:	0.00 lbs/hr
Max Daily:	0.00 lbs/day
UNCONTROLLED EMISSION	
Max Hourly:	0.00 lbs/hr
Max Daily:	0.00 lbs/day
CURRENT EMISSION	
BACT 30 days Avg:	0.00 lbs/day
Annual Emission:	0.00 lbs/yr
District Exemption:	None

Company ID: 499 Application No: 326546

Page #3

Emittant:	CRHEXAVALE
BACT:	
Cost Effectiveness:	NO
Source Type:	MINOR
Emis Increase:	0
Modeling:	N/A
Public Notice:	NA
CONTROLLED EMISSION	
Max Hourly:	0.00 lbs/hr
Max Daily:	0.00 lbs/day
UNCONTROLLED EMISSION	
Max Hourly:	0.00 lbs/hr
Max Daily:	0.00 lbs/day
CURRENT EMISSION	
BACT 30 days Avg:	0.00 lbs/day
Annual Emission:	0.00 lbs/yr
District Exemption:	None

Emittant:	PM10
BACT:	
Cost Effectiveness:	NO
Source Type:	MINOR
Emis Increase:	1
Modeling:	N/A
Public Notice:	NA
CONTROLLED EMISSION	
Max Hourly:	0.09 lbs/hr
Max Daily:	0.70 lbs/day
UNCONTROLLED EMISSION	
Max Hourly:	0.09 lbs/hr
Max Daily:	0.70 lbs/day
CURRENT EMISSION	
BACT 30 days Avg:	1.00 lbs/day
Annual Emission:	89.25 lbs/yr ✓
District Exemption:	None


Company ID: 499 Application No: 326546

Page #4

Emittant: ROG
BACT:
Cost Effectiveness: NO
Source Type: MINOR
Emis Increase: 0
Modeling: N/A
Public Notice: NA
CONTROLLED EMISSION
Max Hourly: 0.00 lbs/hr
Max Daily: 0.02 lbs/day
UNCONTROLLED EMISSION
Max Hourly: 0.00 lbs/hr
Max Daily: 0.02 lbs/day
CURRENT EMISSION
BACT 30 days Avg: 0.00 lbs/day
Annual Emission: 2.17 lbs/yr
District Exemption: None

Emittant: TOG
BACT:
Cost Effectiveness: NO
Source Type: MINOR
Emis Increase: 0
Modeling: N/A
Public Notice: NA
CONTROLLED EMISSION
Max Hourly: 0.00 lbs/hr
Max Daily: 0.02 lbs/day
UNCONTROLLED EMISSION
Max Hourly: 0.00 lbs/hr
Max Daily: 0.02 lbs/day
CURRENT EMISSION
BACT 30 days Avg: 0.00 lbs/day
Annual Emission: 2.17 lbs/yr ✓
District Exemption: None

SUPERVISOR'S APPROVAL:



SUPERVISOR'S REVIEW DATE:

5-20-97

Processed By: jeannep 5/15/97 4:30:44 PM

**SCAQMD****Fax Transmittal****Date** May 23, 1997**Number of pages including cover sheet** 3**TO:** Mr. Joe Negrey
Arnco**Phone** 213/249-7500**Fax** 213/249-7507**FROM:** Jeanne Pandes,
Air Quality Engineer II
South Coast AQMD
21865 E. Copley Drive
Diamond Bar, CA 91765**Phone** 909/396-2470**Fax** 909/396-2608**CC:****REMARKS:** ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please Comment

Joe,

Attached is a worksheet showing how the emissions of arsenic, cadmium and hexavalent chromium contained in the limestone-calcium carbonate may be calculated.

The second page includes a sample table/spreadsheet format which may be used to satisfy the recordkeeping requirements of permit condition no. 8 of permit nos. F7256 and F7257.

You may call me with any questions, or comments.

Thank you,

Jeanne Pandes

↑ ↑
326547 326546

Arnco Inc.
South Gate, California
Example Recordkeeping Format
 Permit No. F7256 (A/N 326547), and
 Permit No. F7257 (A/N 326546)

The carcinogenic air contaminant component of the calcium carbonate (CaCO_3) is estimated using the following equation:

$$\left[\frac{\text{lb of CaCO}_3}{\text{day}} \right] \times \left[\frac{2.0 \text{ lb PM}}{2000 \text{ lb of CaCO}_3} \right] \times \left[\begin{array}{c} \text{concentration} \\ \text{of solid component} \\ \text{in CaCO}_3, (\text{i.e., Arsenic,} \\ \text{Cadmium, or Hexavalent} \\ \text{Chromium})^* \end{array} \right] = \left[\frac{\text{lb solid comp.}}{\text{day}} \right]$$

Note : "*" Refer to MSDS for concentrations. For example, MSDS for Limestone, calcium carbonate contains ~2 ppm of arsenic, ~2 ppm of cadmium, and ~0.1 ppm of hexavalent chromium.

Example calculation for Arsenic:

$$\left[\frac{100 \text{ lb of CaCO}_3}{\text{day}} \right] \times \left[\frac{2.0 \text{ lb PM}}{2000 \text{ lb of CaCO}_3} \right] \times \left[\frac{2 \text{ part As}}{1,000,000 \text{ part PM}} \right] = \left[\frac{0.2 \times 10^{-6} \text{ lb As}}{\text{day}} \right]$$

Arneo Inc.,
South Gate, California
Example Recordkeeping Format
 Permit No. F7256 (A/N 326547), and
 Permit No. F7257 (A/N 326546)
 (cont.)

Example Set-up for Spreadsheet:

This format, or similar format providing same information, may be used to show compliance with permit condition nos. 3, 4 and 5 of the above permits to construct. Values shown in italics may change, depending upon material usage, and material make-up. Maintain running subtotals for calendar year.

Date	Amount of CaCO ₃ used (lb)	Emission Factor 0.001 lb PM/lb solid material	Concentration of Arsenic in Raw Material	Amount of Arsenic Emitted (lb)
5/22/97	100 lb	0.001	2×10^{-6}	0.2×10^{-6}
5/23/97	350 lb	0.001	2×10^{-6}	0.7×10^{-6}
....
Subtotal ==>				0.9×10^{-6}

Date	Amount of CaCO ₃ used (lb)	Emission Factor 0.001 lb PM/lb solid material	Concentration of Cadmium in Raw Material	Amount of Cadmium Emitted (lb)
5/22/97	100 lb	0.001	2×10^{-6}	0.2×10^{-6}
5/23/97	350 lb	0.001	2×10^{-6}	0.7×10^{-6}
....
Subtotal ==>				0.9×10^{-6}

Date	Amount of CaCO ₃ used (lb)	Emission Factor 0.001 lb PM/lb solid material	Concentration of Hex Chrom. in Raw Material	Amount of Hex. Chrom. Emitted (lb)
5/22/97	100 lb	0.001	0.1×10^{-6}	0.01×10^{-6}
5/23/97	350 lb	0.001	0.1×10^{-6}	0.035×10^{-6}
....
Subtotal ==>				0.045×10^{-6}

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE COMPLIANCE Small Coating, Printing and Chemical Operations Team PERMIT APPLICATION EVALUATION	Page	1 of 3
	App. number	326546, and -547
	Processed by	J Pandes
	Reviewed by	<i>[Signature]</i> S Chaurushiya
	Date	5/15/97

PERMIT TO CONSTRUCT/OPERATE EVALUATION
Mixing Tanks

Applicant's Name: Arnco
Company ID No.: 000499
Mailing Address: 5141 Firestone Place, South Gate, CA 90280
Equipment Address: 5141 Firestone Place, South Gate, CA 90280

EQUIPMENT DESCRIPTION

Application No. 326546:

BLENDING TANK, NO. FC1, POLYURETHANE, PFAUDLER, SERIAL NO. E-378-0386, 200-GALLON CAPACITY, 3'-6" DIA. X 4'-0" H., JACKETED, WITH ONE 2-HP. AGITATOR.

Application No. 326546:

BLENDING TANK, NO. FC2, POLYURETHANE, PFAUDLER, SERIAL NO. E-368-0398, 200-GALLON CAPACITY, 3'-6" DIA. X 4'-0" H., JACKETED, WITH ONE 2-HP. AGITATOR.

HISTORY

These Arnco applications for two mixing tanks were deemed complete on March 26, 1997 for the issuance of permits to construct/operate. According to the AQMD's database, no notices to comply or notices of violation were issued for this equipment. The facility is located within a commercial-industrial area, which is located in sensitive receptor zone no. 1.

PROCESS DESCRIPTION

This Arnco facility produces polyurethane elastomers. There are several other blending tanks and reactors presently permitted at this facility. They are used for mixing a variety of one- and two-component elastomers. These two smaller 200-gallon capacity mixers will be used for mixing the same products in smaller sample batches. The raw materials include very viscous liquids, polymethylene polyphenylene ester and polyester polyols, and solid particles of calcium carbonate and 1,4-butanediol. The tanks are heated to approximately 150 deg F with a heated jacket circulating water between the two tanks. Their average (and maximum) operating hours will be 8 hrs/day, 5 days/wk, and 51 wks/yr. ✓

EMISSION CALCULATIONS

VOC emissions will be released from the raw materials during the blending process, and were estimated as filling losses. See the attached emission calculations in the Appendix. In addition, though there are some particulate emissions from the calcium carbonate. See below. The average emissions will be assumed to be 50% of the maximum emissions.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE COMPLIANCE Small Coating, Printing and Chemical Operations Team PERMIT APPLICATION EVALUATION	Page	2 of 3
	App. number	326546, and -547
	Processed by	J Pandes
	Reviewed by	<i>K</i> S Chaurushiya
	Date	5/15/97

PM Emissions:

$$PM_{\max} := \frac{700 \text{ lb CaCO}_3}{\text{day}} \cdot \frac{2 \text{ lb PM}}{2000 \text{ lb mat}^1} = 0.7 \frac{\text{lb}}{\text{day}} \implies 0.088 \frac{\text{lb}}{\text{hr}}$$

$$PM_{\text{NSR}} = 0.7 \frac{\text{lb}}{\text{day}} \cdot \frac{23 \text{ days}}{30 \text{ days}} = 0.54 \frac{\text{lb}}{\text{day}} \implies 1 \frac{\text{lb}}{\text{day}}$$

$$PM_{\text{avg}} = \frac{1}{2} \cdot 0.7 \frac{\text{lb}}{\text{day}} = 3.5 \frac{\text{lb}}{\text{day}} \implies 0.44 \frac{\text{lb}}{\text{hr}} \implies 892.5 \frac{\text{lb}}{\text{yr}} \checkmark$$

RULES/REGULATION EVALUATION**> RULE 212, PUBLIC NOTIFICATION****◆ PARAGRAPH 212(c)(1):**

This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. As shown on 1996 Thomas Bros. Guide, Los Angeles (and Orange County) Edition, page 705, grid E3, the equipment emission point is not located within 1000 feet of the outer boundary of a school. ✓

◆ SUBPARAGRAPHS 212(c)(2) and (3):

The VOC emission increase shall not exceed the daily maximum thresholds specified in Rule 1309.1(a), or more than three pounds per day of lead. Therefore, there will be no public notice requirements by these subparagraphs. ✓

> RULE 401, VISIBLE EMISSIONS

With the proper use and operation of the blending tanks, no visible emissions are expected.

> RULE 402, NUISANCE

With the proper operation of the blending tanks, no nuisance problems are expected.

> RULE 442, USAGE OF SOLVENTS**◆ PARAGRAPH (a)(2)**

No VOC's will be emitted during these mixing operations. Therefore, the requirements of this rule do not apply.

> RULE 1141, CONTROL OF VOC EMISSIONS FROM RESIN MANUFACTURING

The provisions of subdivision (b) shall not apply to this Arnco facility since it will emit less than a total of ten pounds of VOC per day from all of the equipment subject to this rule. According to the AQMD database, their facility total VOC potential-to-emit is 8 lbs/day. ✓

> REGULATION XIII**◆ RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)****◆ RULE 1304 (d), FACILITY EXEMPTION**

The mixing operations within these two mixing tanks will not result in a net increase of emissions. Therefore, the requirements of this rule will not apply.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE COMPLIANCE Small Coating, Printing and Chemical Operations Team PERMIT APPLICATION EVALUATION	Page 3 of 3 App. number 326546, and -547 Processed by J Pandes Reviewed by <i>lc</i> S Chaurushiya Date 5/15/97
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➤ **RULE 1401, NEW SOURCE REVIEW OF CARCINOGENIC AIR CONTAMINANTS**

This rule applies to new, relocated and modified permit units which were received by the AQMD on, or after, June 1, 1990. Based on the MSDSs that were provided by the applicant, the calcium carbonate raw material contains small quantities of arsenic, cadmium and hexavalent chromium. Based upon the the maximum quantities of raw materials being mixed in each tank, the following emissions would result:

Maximum PM emissions per year = $178.5 \frac{\text{lb}}{\text{yr}}$; [Screening level]

$$\text{Cr}^{+6}_{\text{max}} = 178.5 \frac{\text{lb}}{\text{yr}} \cdot \left[\frac{0.1 \times 10^{-6} \text{ lb Cr}^{+6}}{\text{lb PM}} \right] = 1.79 \times 10^{-5} \frac{\text{lb Cr}^{+6}}{\text{yr}} \lll 0.0002 \frac{\text{lb Cr}^{+6}}{\text{yr}}$$

$$\text{As}_{\text{max}} = 178.5 \frac{\text{lb}}{\text{yr}} \cdot \left[\frac{2 \times 10^{-6} \text{ lb As}}{\text{lb PM}} \right] = 3.6 \times 10^{-4} \frac{\text{lb As}}{\text{yr}} \lll 0.004 \frac{\text{lb As}}{\text{yr}}$$

$$\text{Cd}_{\text{max}} = 178.5 \frac{\text{lb}}{\text{yr}} \cdot \left[\frac{2 \times 10^{-6} \text{ lb Cd}}{\text{lb PM}} \right] = 3.6 \times 10^{-4} \frac{\text{lb Cd}}{\text{yr}} \lll 0.008 \frac{\text{lb Cd}}{\text{yr}} \checkmark$$

Therefore, compliance with this rule is expected. The applicant will be limited by permit conditions to emit no more than the weight of As, Cd, and Cr^{+6} annual screening quantities shown above. The raw materials shall not contain any other carcinogenic air contaminants as identified on Table I of Rule 1401, as amended on December 7, 1990.

CONCLUSIONS/RECOMMENDATIONS

As discussed above, this equipment is expected to comply with all the AQMD Rules and Regulations when it is properly operated. The applicant has been contacted, and is in agreement with the permit descriptions, and the permit conditions. Thus, the issuance of the Permits to Construct/Operate is recommended with the conditions listed on the sample permits.

PREVIEW TRANSACTIONS FROM WORKSPACE
Fac. 499 Appl. 326548 Dev. 0 Type Permit to Construct Disp. 31

Page #1

326548	0	499	ARSENIC	INSTALL	0	Current emission from FacID#499, Appl#326548, Dev#0
326548	0	499	CADMIUM	INSTALL	0	Current emission from FacID#499, Appl#326548, Dev#0
326548	0	499	CRHEXAVALE	INSTALL	0	Current emission from FacID#499, Appl#326548, Dev#0
326548	0	499	PM10	INSTALL	1	Current emission from FacID#499, Appl#326548, Dev#0
326548	0	499	PM10	EXMTTHRES	-1	Emissions Exempt from threshold
326548	0	499	ROG	INSTALL	0	Current emission from FacID#499, Appl#326548, Dev#0
326548	0	499	TOG	INSTALL	0	Current emission from FacID#499, Appl#326548, Dev#0

5/15/97 4:31 PM

APPENDIX (A/N 326546 and 547 : Arnco)
VOC Emissions From Polyurethane Chemical Blending Tanks

1. Emission Calculation / Equation for Filling Losses

To estimate the VOC emissions, the following equation is used to determine the filling losses:

$$F = \frac{(2.4) \times M \times P \times V \times K}{(100,000) \times C} \times (\text{\# of batches / day})$$

Where:

F = Filling loss (lb/day)

From API formula

M = Average molecular weight (lb)

Pv = Vapor pressure (lb/in²)

V = Volume fill (gallons) per batch

K = % saturation in vapor space, usually 1

C = Compressibility factor, usually 1 for most organic liquids

2. Material Usage

Based upon information from the applicant, the following non-solid materials are mixed in each tank.

Given data:

Process Volume:	200 gal/batch (max)	K #	1
Batches per Day:	1 #/day	C factor	1

Compound	Vapor Pres. (psia)	M.W. (lb/lb-mole)	Max usage (gal/day)	VOC emiss (lb/day)
Polyol	1.93E-015	470	1400	0.000
Isocyanic Acid (MDI)	1.93E-016	300	1400	0.000
1,4 - butanediol	1.93E-012	90	400	0.017

R1 = R2 = F 0.017 lb/day Maximum TOG emission rate (Applicant's estimated maximum usage)

3. Operating Schedule and Emission Calculations

8 Hr/Day	Avg Emissions =	50% Maximum emissions
5 Day/Wk	VOC =	100% TOG emissions
23 Day/Mo		
51 Wk/Yr		

	NSR			AEIS	
	Lb/Hr	Lb/Day	30-Day	Lb/Hr	Lb/Yr
Actual TOG	0.002	--	--	0.001	2.17
VOC	0.002	0	0	0.001	2.17

Page #1

ARBICO
FACILITY : 000488 : Arbico

CO	0	0	499
LEAD	0	0	499
NOX	0	0	499
PM10	1	0	499
PM2.5	0	0	499
SOX	0	0	499

5/31/2013 1:21 PM

ADDITIONAL INFORMATION FOR MIXING TANKSContact Person: JOE NEUREY Telephone: 213.249.7500Company Name ANCO Appl no. _____Operating schedule: 8 hrs/day, 5 days/wk, 51 wk/yrMaximum number of batches per day: 1Minimum number of hours per batch: 4Mixer Type: ☐ post mixer ☒ mixing tank 200 gal. capacity, Dia 42", L ,
W. , H. 48"Ink or paint manufacturer ☐ Yes ☒ NoMixer manufacturer PEAWLER Mixer No. FC1Model No. N/A Serial No. E-368-0398Mixing tank products: POLYURETHANESOperating temperature: 150 degrees F Jacketed: ☐ No ☒ YesMethod of heating: ☐ none ☐ steam ☐ electrical HEAT TRANSFER W/
WATER USING JACKETInitial temperature: AMBIENT Final temperature: 150Method of cooling: ☒ none ☐ refrigeration ☐ waterReflux condenser: ☒ none ☐ air cooled ☐ coaxial ☐ horizontalAgitator: Make PEAWLER, HP 2, ☐ noneROG control system: ☒ none _____, Efficiency _____%

ROG control system application no.: _____

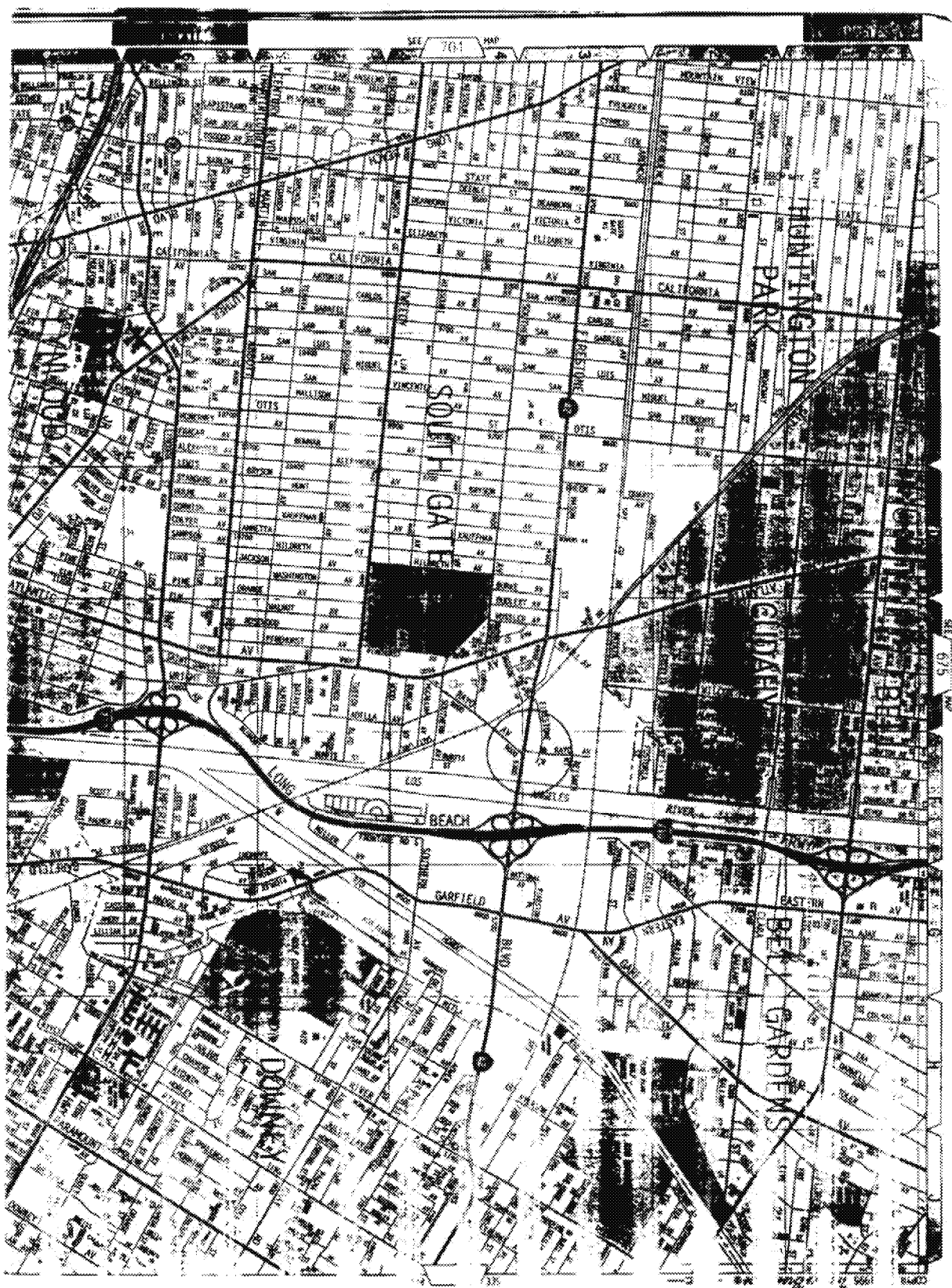
PM 10 control system application no.: _____

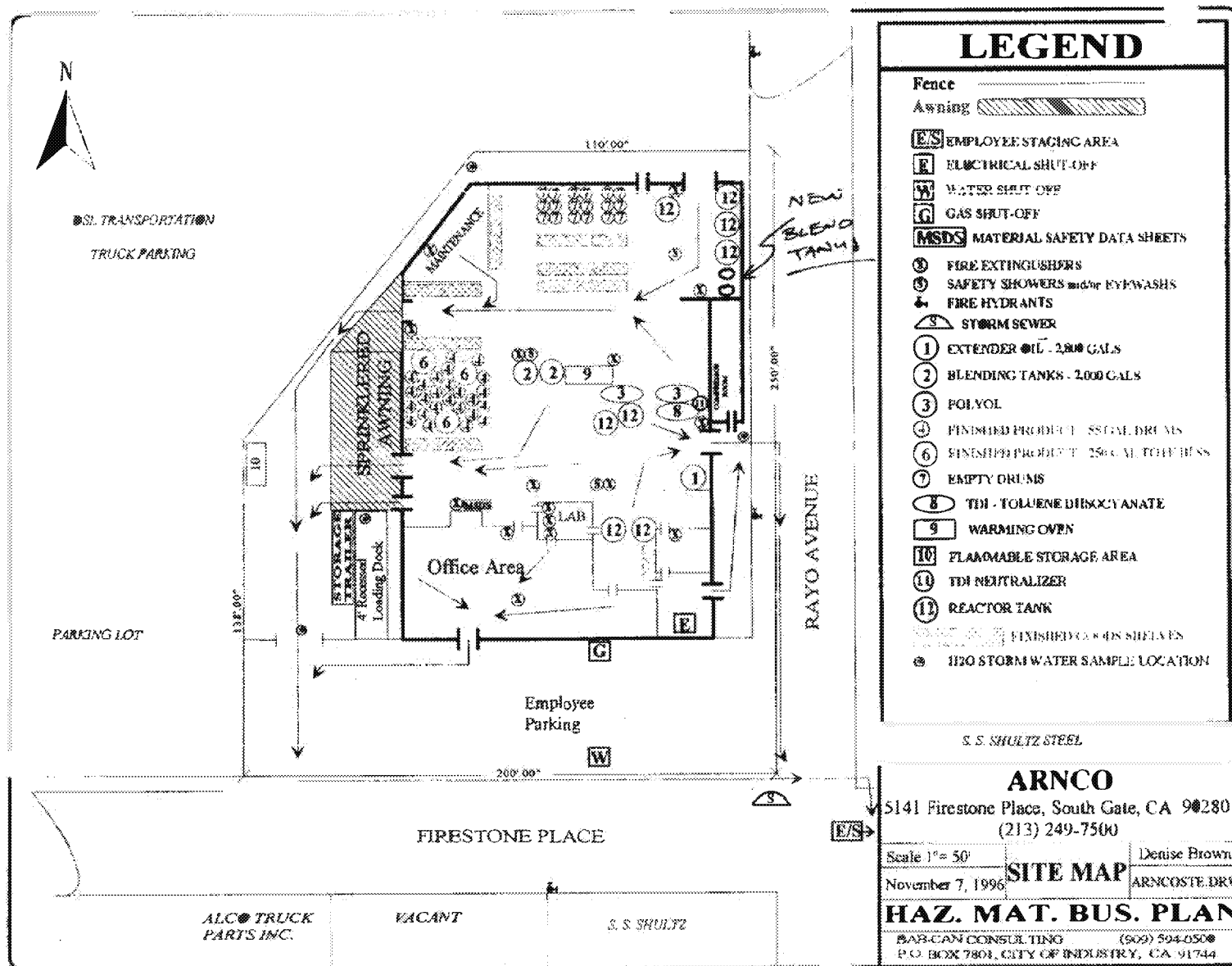
Air flow rate: _____ cfm

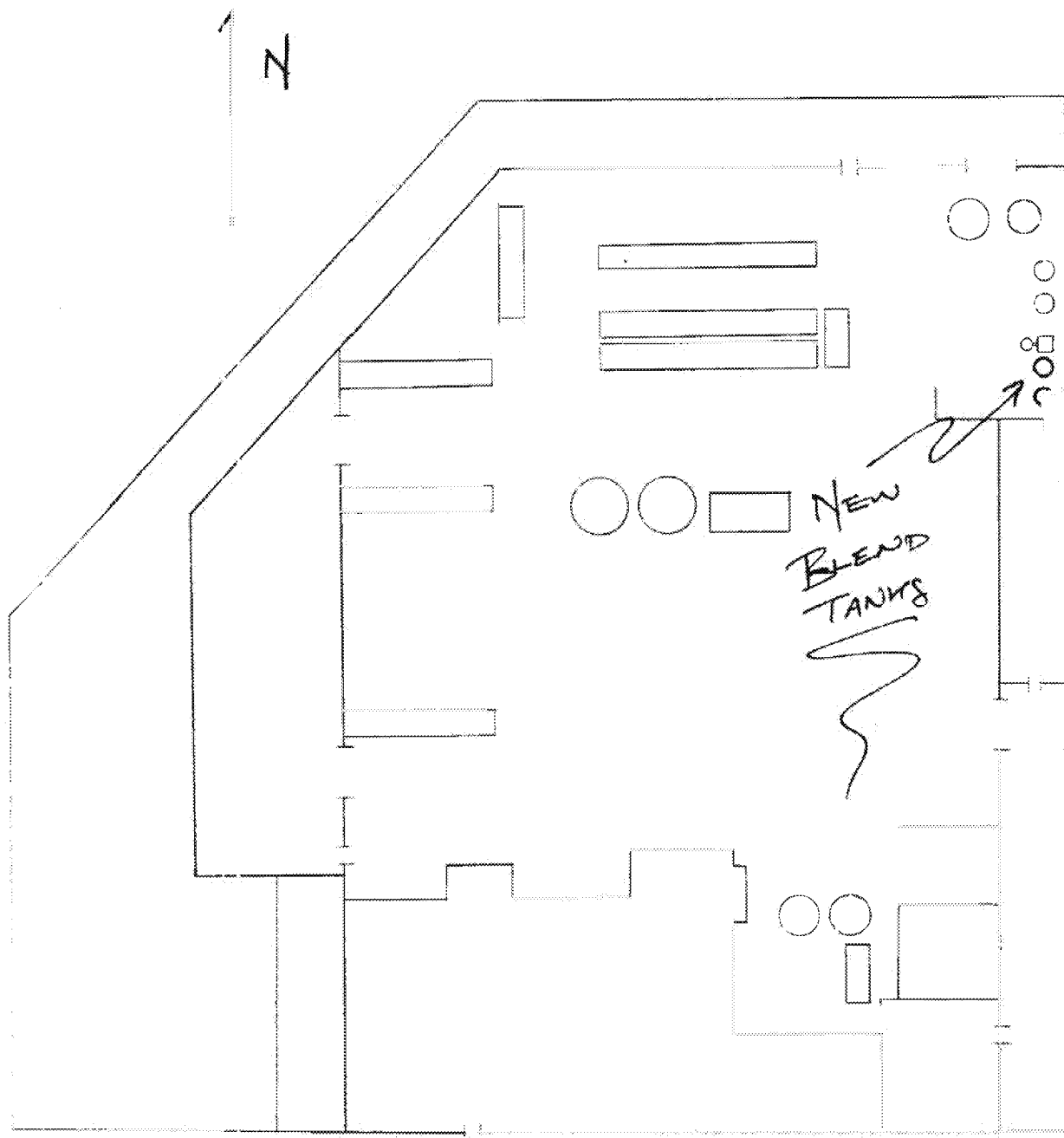
Ingredient added	Ave. amt	Max. amt	M.W.	V.P. (mm Hg)	MSDS
<u>Polyol</u>	<u>300</u>	<u>1400</u>	<u>4700</u>	<u><.001</u>	<input checked="" type="checkbox"/>
<u>MP1</u>	<u>1400</u>	<u>1400</u>	<u>300</u>	<u><.0001</u>	<input checked="" type="checkbox"/>
<u>CALCIUM CARBONATE</u>	<u>100</u>	<u>700</u>	<u>N/A</u>	<u>N/A</u>	<input checked="" type="checkbox"/>
<u>LY BPO</u>	<u>400</u>	<u>400</u>	<u>90</u>	<u><1</u>	<input checked="" type="checkbox"/>

Powder added: ☐ No ☒ Yes, Maximum amt 700, Ave. amt 200Toxic ingredients ☒ No ☐ Yes, _____, amt used _____

CALCIUM







Pre-Screening Fee Assessment Report

03/26/97

Facility name : ARNCO

Small Business : No

Fac Team : K Eng. Init : DRH Phone Ext : 2512 No. C/O Appls : 0

Comments :

Appl Type	Plan No Eval	Equip Type	BCat	CCat	Identical Equip	Penalty	Fee Amount
10		B	285100				\$738.40
10		B	285100		Y		\$184.60

Fee Total : \$923.00

2

30-da



South Coast
Air Quality Management District
21866 E. Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000

Date: 03/21/07 04:16 PM Receipt Nbr: C2526

Facility: 493 ARNCO

Location Address: 5141 FIRSTONE PL

City: S.GATE State: CA Zip: 90280

Check nbr.	Amount	Check Nbr.	Amount	Cash:
053904	\$923.00		\$0.00	\$0.00
	\$0.00		\$0.00	
	\$0.00		\$0.00	
	\$0.00		\$0.00	
	\$0.00		\$0.00	
	\$0.00		\$0.00	
				Total: \$923.00

Comments:

(2) APPLS NEW

Received By:

AQMD Cashier

Cashier Signature:

Duplicate Copy

PLEASE DETACH BEFORE CASHING

**Polyurethanes****MATERIAL SAFETY DATA SHEET****ICI POLYURETHANES GROUP • Mantua Grove Road • W. Deptford, NJ 08066 • (609) 423-8300**

800-424-9300 (24 hours) for Spills, Leaks, Fire & Exposure (CHEMTREC)

800-327-8633 (24 hours) Medical Emergencies or Inquiries

800-257-5547 (daytime) Safety, Health, and Environmental or Technical Assistance

SECTION 1 NAME AND HAZARD SUMMARY

Material name:

*** RUBINATE® 1820 (formerly RUBINATE® MF-182) *I-342*

Hazard summary (as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200):

Physical hazards: None (see Section 5)

Health hazards: Based on MDI – irritant (eye, skin, respiratory passages, skin sensitizer), inhalation (TLV), harmful (respiratory sensitizer, lung injury).

Read the entire MSDS for a more thorough evaluation of the hazards.

SECTION 2 INGREDIENTS

*** Polymethylene polyphenylene ester
isocyanic acid ("polymeric" MDI; CAS 9016-87-9)
CONTAINS:
4,4'-Diphenylmethane diisocyanate (~65%)
(MDI; CAS 101-68-8)
Similar structure oligomers (~35%)
(CAS 9016-87-9)

%**OSHA PEL**

100

Not listed

0.02 ppm, ceiling

Not listed

Ingredients not precisely identified are proprietary or nonhazardous. Values are not product specifications.

SECTION 3 PHYSICAL DATA

Appearance and odor: Dark brown viscous liquid with slight odor

Boiling point: Decomposes at 646°F, 341.1°C

Vapor pressure (mm Hg at 20°C): <0.0001

Vapor density (air = 1): No data

Solubility in water: Reacts

pH: No data

Specific gravity: 1.2 *10.01*

% Volatile by volume: No data

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point: 397°F, 203°C (COC)

Autoignition temperature: No data

Flammable limits (STP): No data

MATERIAL SAFETY DATA SHEET (continued)

RUBINATE® 1820

SECTION 4 FIRE AND EXPLOSION HAZARD DATA (continued)

Extinguishing media:

Dry chemical, foam, carbon dioxide, halogenated agents. If water is used, use very large quantities. The reaction between water and hot isocyanates may be vigorous.

Special fire fighting protective equipment:

Self-contained breathing apparatus with full facepiece and protective clothing.

Unusual fire and explosion hazards:

Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

SECTION 5 REACTIVITY DATA

Stability:

Stable under normal conditions.

Incompatibility:

This product will react with any materials containing active hydrogens, such as water, alcohol, ammonia, amines, alkalis and acids. The reaction with water is very slow under 50°C, but is accelerated at higher temperatures and in the presence of alkalis, tertiary amines, and metal compounds. Some reactions can be violent.

Hazardous decomposition products:

Combustion products: Carbon dioxide, carbon monoxide, Nitrogen oxides, ammonia. Trace amounts of hydrogen cyanide.

Hazardous polymerization:

May occur. High temperatures in the presence of alkalis, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

SECTION 6 HEALTH HAZARD ASSESSMENT

General:

No toxicity information is available on this specific preparation: this health hazard assessment is based on information that is available on the properties of its components.

Ingestion:

The acute oral LD50 in rat is probably above 10,000 mg/kg. Relative to other materials, a single dose of this product is practically nontoxic by ingestion. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion.

Eye contact:

This material will probably irritate human eyes following contact.

MATERIAL SAFETY DATA SHEET (continued)

RUBINATE® 1820

SECTION 6 HEALTH HAZARD ASSESSMENT (continued)**Skin contact:**

No irritation is likely to develop following short contact periods with human skin. Skin sensitization and/or irritation may develop after repeated and/or prolonged contact with human skin.

- *** Data derived from an animal model (guinea pig) demonstrate that dermal exposure to MDI can lead to respiratory sensitization. The data indicate that the greater the amount of MDI skin exposure, the greater the risk of developing respiratory sensitization. The potential for MDI to induce respiratory sensitization in humans and animals by inhalation is well known; however, this recent data indicates that this effect can be induced by skin contact. This data strongly suggests the need for increased emphasis on skin protection.

Skin absorption:

Systemically toxic concentrations of this product will probably not be absorbed through human skin.

Inhalation:

Vapors and aerosols can irritate eyes, nose and respiratory passages. Severe overexposure may lead to pulmonary edema. MDI can induce respiratory sensitization with asthma-like symptoms similar to those induced by TDI (toluene diisocyanate). Symptoms include chronic cough, tightness of chest with difficulty in breathing. These symptoms may be immediate or delayed up to several hours after exposure. There are reports that chronic exposures may result in permanent decreases in lung function.

Other effects of overexposure:

Recently, a study was completed where groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmospheres of respirable polymeric MDI aerosol. Overall, the tumor incidence, both benign and malignant, and the number of animals with tumors were not different from controls. However, at the top level only (6 mg/m³), there was a significant incidence of a benign tumor of the lung (adenoma) and one malignant tumor (adenocarcinoma). There were no lung tumors at 1 mg/m³ and no effects at 0.2 mg/m³. The increased incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumor formation will occur.

First aid procedures:

Skin: Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention.

Eyes: Immediately flush with plenty of water for at least 15 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

Ingestion: Give 1 or 2 glasses of water to drink. If gastrointestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person.)

Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

SECTION 7 SPILL OR LEAK PROCEDURES**Steps to be taken in case material is released or spilled:**

Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 0.2-0.5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets. All operations should be performed by trained personnel familiar with the hazards of the chemicals used. Treat the spill area with the decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 10 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

MATERIAL SAFETY DATA SHEET (continued)

RUBINATE® 1820

SECTION 7 SPILL OR LEAK PROCEDURES (continued)**Disposal method:**

Slowly stir the isocyanate waste into the decontamination solution described above using 10 parts of the solution for each part of the isocyanate. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away. Neutralize the waste. Neither the solid nor the liquid portion is a hazardous waste under RCRA, 40 CFR 261.

Container disposal:

Drums must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 5-15 liters of decontaminating solution into the drum, making sure the walls are well rinsed. Leave the drum soaking unsealed for 48 hours. Pour out the decontaminating solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal.

Note that the disposal of spent decontamination solutions may be subject to federal, state or local regulations, ordinances or conditions of discharge permits. Local regulations should also be consulted before final disposition of decontaminated drums.

SECTION 8 SPECIAL PROTECTION INFORMATION**TLV® or suggested control value:**

No ACGIH TLV or OSHA PEL is assigned to this mixture. Control of exposure to below the PEL for the ingredients (see Section 2) may not be sufficient. Minimize exposure in accordance with good hygiene practice. The ACGIH TLV for MDI is 0.005 ppm 8-hour TWA. The OSHA PEL for MDI is 0.02 ppm, ceiling. NIOSH recommends 0.005 ppm TWA and 0.02 ppm STEL. These control limits do not apply to previously sensitized individuals or to individuals with existing respiratory disease, such as chronic bronchitis, emphysema, or asthma. Sensitized individuals should be removed from any further exposure.

Ventilation:

If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation." Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

Respiratory protection:

Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below the TLV at room temperatures. Exceptions are when the material is sprayed or heated. If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full facepiece, or an air-supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

Protective clothing:

Gloves determined to be impervious under the conditions of use. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before rewearing.

Testing of some commercially available protective clothing indicates that clothing constructed of butyl rubber, nitrile rubber, Saranex® coated Tyvek® and some neoprene garments have excellent resistance to permeation by MDI. Clothing constructed of neoprene/latex rubber and some PVC garments exhibited limited resistance to permeation by MDI. Clothing constructed of polyethylene, latex rubber, PVC or poly laminated Tyvek® showed little resistance to permeation by MDI. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

MATERIAL SAFETY DATA SHEET (continued)

RUBINATE® 1820

SECTION 8 SPECIAL PROTECTION INFORMATION (continued)

Eye protection:

Chemical tight goggles; full faceshield in addition if splashing is possible.

Other protective equipment:

Eyewash station and safety shower in work area.

SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

Special precautions or other comments:

Prevent skin and eye contact. Observe TLV limitations. Avoid breathing vapors or aerosols. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product which caused the sensitization. Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool area. Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed to isocyanates. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

SECTION 10 REGULATORY INFORMATION

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710:

All ingredients are on the TSCA Chemical Substance Inventory.

CERCLA and SARA Regulations (40 CFR 355, 370, and 372):

Section 313 Supplier Notification. This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

65% MDI, listed as Methylenediis (phenylisocyanate), MDI (CAS 101-68-8)

Prepared by: "Polyurethanes SHE"

Telephone: (609) 423-8518

The information herein is given in good faith but no warranty, expressed or implied, is made.

2288

CCDB: C11129

CIDS: 23018

Issue Date: 11/6/92

***This line or section contains revisions or new statements since the last issue date.

The ICI Polyurethanes Group is a business unit of ICI Americas Inc.
RUBINATE is a registered trademark of ICI Americas Inc.

11/92

DEC-04-1995 15:24 FROM ARCO CUST SERVICE

TO

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MATERIAL SAFETY DATA SHEET

27

ARCOL® POLYOL E-434

MSDS No P000331-1-030-A-48
Ver. No. 1
Ver. Date NOV 30 94ARCO Chemical Company
3801 West Chester Pike
Newtown Square, PA 19073-3287

H-347

IMPORTANT: Read the MSDS before handling and disposing of this product and pass this information on to the employees, customers, and users of this product. This product is covered by the OSHA Hazard Communication Rule and this document has been prepared in conformance with the MSDS requirements of this rule.

1. General			
Trade Name	ARCOL® POLYOL E-434		Telephone Numbers:
Other Company Names	None		EMERGENCY 800/434-8300 CHEMTREC 810/388-8300 ARCO CHEM CUSTOMER SERVICE 800/321-7000 INFO ONLY
Synonyms	Polyethylene-Polypropylene Glycol Glyceryl Ether		
Other Industry Names	None		
Chemical Family	Polyether polyols		
Generic Name	Poly(Oxyalkylene) Polymer		
DOT Hazardous Material Proper Shipping Name Not regulated			
DOT Hazard Class Not regulated	DOT Packing Group Not regulated	DOT Reportable Quantity (Based on Material) Not regulated	UN/NA ID No. Not regulated
CAS No. (See Section 9 - Components)	Company Material ID BE576		MSDS Class P
2. Summary of Hazards			
Signal Word	CAUTION		
Physical Hazards	Slightly combustible liquid		
Acute Health Effects (Short-Term)	Slight eye irritant No inhalation hazard identified from data available No skin absorption hazard identified from data available No skin irritation hazard identified from data available No ingestion hazard identified from data available		
Chronic Health Effects (Long-Term)	No adverse chronic health effects have been identified from the data available		
3. Fire and Explosion			
Flash Point AP 380°F (PMSC) (See special firefighting procedures elsewhere in this document)	Autoignition Temperature No Data Available		Flammable Limits No Data Available
Fire and Explosion Hazards	Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fire spray/mists may be combustible at temperatures below normal flash point.		
Extinguishing Media	Dry chemical CO ₂ Foam		
Extinguishing Media Use Comment	Use water/spray/waterfog for cooling		
Special Firefighting Procedures	Do not enter fire area without proper protection. Fight fire from a safe distance/protected location. Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. Do not use solid water stream/may spread fire. Use water spray/fog for cooling. Avoid breathing/vapors/exposure. Notify authorities immediately if liquid enters sewer/public water.		

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ARCO® POLYOL E-434

 MSDS No. POL0331-1.03NA-AE
 Ver. No. 2
 Ver. Date NOV 30 94

4. Health Hazards

Summary of Acute Hazards	Slight health hazard.	
ROUTE OF EXPOSURE	SIGNS AND SYMPTOMS	PRIMARY ROUTE(S)
Inhalation	No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of inhalation exposure.	No
Eye Contact	May cause minimal irritation.	Yes
Skin Absorption	No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin absorption exposure.	No
Skin Irritation	No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of skin exposure.	No
Ingestion	No significant signs or symptoms indicative of any health hazard are expected to occur as a result of ingestion.	No
Summary of Chronic Hazards	No adverse chronic health effects are expected from anticipated conditions of normal use of this material.	
Special Health Effects	No additional medical information found.	

5. Protective Equipment and Other Control Measures

Respiratory	Not expected to present a respiratory hazard due to normally low vapor pressures. Where excessive vapor, mist, or dust may result from use, use U.S. National Institute for Occupational Safety and Health (NIOSH)/U.S. Mine Safety and Health Administration (MSHA) approved respiratory protection equipment.
Eye	Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor.
Skin	PVC-coated gloves should be worn.
Engineering Controls	Use with adequate ventilation. General mechanical room ventilation is satisfactory for normal handling and storage operations.
Other Hygienic Practices	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Other Work Practices	Material spilled on hard surface can be a serious slipping/falling hazard. Use care in walking on spilled material. Spread coarse, inert granular cover such as sand, on any affected walking surface.

6. Occupational Exposure Limits

Substance	Source	Date	Type	Value/Limit	Time	Skin
No occupational exposure limit(s) have been established for this material or its components.						
Exposure Limit Comments	No additional Occupational Exposure Limit information available.					

7. Emergency and First Aid

Inhalation	Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
Eye Contact	In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention if pain, blinking, tears or redness persist.
Skin Contact	Not expected to present a significant skin hazard under anticipated conditions of normal use.
Ingestion	Ingestion unlikely. However, if ingested, obtain emergency medical attention.
Physician's Emergency Medical Treatment Procedures	There is no specific antidote. Treatment of overexposure should be directed at control of symptoms and the clinical condition of the patient.

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ARCO® POLYOL E-434

 MSDS No. P000331-1-03HA-AE
 Ver. No. 2
 Ver. Date NOV-10-94

7. Emergency and First Aid (Cont'd)

 Physician's
 Decontamination
 Procedures

No additional medical information found.

8. Spill and Disposal

 Precautions If Material is Spilled or Released
 Slippery walking. Spread granular cover. Prevent flow to sewer/public waters.

Waste Disposal Methods

Landfill solids at permitted sites. Use registered transporters. Burn concentrate liquids. Avoid flame-arcs. Assure emissions comply with applicable regulations. Aqueous wastes may not biodegrade. Contaminated product, soil, water, container residues and spill cleanup materials should not be designated hazardous wastes.

9. Components

(This may not be a complete list of components.)

(Compositions given are typical values, not specifications.)

Chemical Name	CAS No.	Composition Amount (Wt. %)	Classification
Propylene Oxide, Polymer with Ethylene Oxide and Glycerol	8082-00-2	AP 100 %	NP

0001=U.S. National Toxicological Program 2=International Agency for Research on Cancer 3=U.S. Occupational Health and Safety Administration 4=American Conference of Governmental Industrial Hygienists 9=Other

10. Component Health Hazards

Component	Component Health Hazards
ethylene Oxide, Polymer with Ethylene Oxide and Glycerol	Slight eye irritant

11. Additional Toxicological Information

 Component Name/Comments
 No additional toxicology information is available for the components of this material.

 Material
 No additional toxicology information is available for this material.

12. Physical and Chemical Data

Boiling Point No Data Available	Viscosity AP 835 to 1233 CPS (at 68°F)	Dry Point No Data Available
Freezing Point LT 18°F	Vapor Pressure LT 001 mm Hg (at 68°F)	Volatile Characteristics Not available
Specific Gravity AP 1.01 to 1.05 (H ₂ O = 1.0 at 39.2°F)	Vapor Specific Gravity No Data Available	Solubility in Water Slight (.1 to Less Than 1 Percent)
pH AP 4 to 8	Hazardous Polymerization Not expected to occur	Stability Stable
Other Chemical Reactivity	Reacts exothermically with isocyanates	
Other Physical and Chemical Properties	Hygroscopic, prevent exposure to moisture	
Appearance and Odor	Clear; Viscous liquid, Mild odor	
Conditions to Avoid	Decomposes when heated. Heating in the presence of air (oxygen) to temperatures above 212°F may result in the formation of aldehydes.	
Reactions to Avoid	Strong oxidizing agents, Strong acids	

SEQ:1

Page 3 of 8

DEC-04-1995 15:25 FROM PROC CUST SERVICE

6.12.253 94/44 1.14



ARCOL® POLYOL E-434

MSDS No P003351-1-05HAAJE
Ver. No 2
Ver. Date NOV 20 94**12. Physical and Chemical Data (Cont'd)**

Hazardous Decomposition Products	Combustion may produce oxides of carbon and other toxic gases Carbon monoxide is highly toxic if inhaled Carbon dioxide in sufficient concentrations can act as an asphyxiant Acute overexposure to the products of combustion may result in irritation of the respiratory tract
---	---

13. Hazards Rating Information**National Fire Protection Association**

Ratings have been not been established for this material, as component information is not presently available from the National Fire Protection Association.

National Paint and Coatings Association**Hazardous Material Information System (HMIS)**

Ratings information for this material is in the process of being generated and will be included on this MSDS as soon as possible.

14. Additional Precautions**Handling and Storage Procedures**

Hygroscopic. Use dry nitrogen or low dew point air for tank padding. Keep drums tightly closed to prevent contamination. Store between 68°F and 140°F.

Decontamination Procedures

Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair. Wear recommended personal protective equipment. Observe precautions pertaining to confined space entry.

DEC-04-1995 15:27 FROM PROC CUST SERVICE

1 512 253 547607 1443



ARCOL® POLYOL E-434

MSDS No. P000231-1-05A-A-02
Rev. No. 2
Rev. Date NOV 20 94**15. Regulatory Information****Federal****Toxic Substance Control Act (TSCA)**

The following is the Toxic Substances Control Act (TSCA) Chemical Substance (Inventory Status of the components of this material with CAS numbers listed in Section 9 - Components:

CHEMICAL	CAS NO.	STATUS
Propylene Oxide, Polymer with Ethylene Oxide and Glycerol	9082-00-2	Listed - Non Confidential

Superfund Amendments and Reauthorization of 1980 (SARA), Title III**-Section 302/304**

Requires emergency planning based on 'Threshold Planning Quantities' (TPQs), and release reporting based on 'Reportable Quantities' (RQs) of 'Extremely Hazardous Substances' (EHS) listed in Appendix A of 40 CFR 355. There are no components of this material with known CAS numbers which are on the EHS list.

-Section 311 & 312

Based upon available information, this material and/or components are not classified as any of the specific health and/or physical hazards defined by Section 311 & 312.

-Section 313

This material does not contain any chemical components with known CAS numbers that exceed the De Minimis reporting levels established by SARA Title III, Section 313 and 40 CFR 372.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

OSHA Regulations

'Chemical-specific' U.S. Occupational Safety and Health Administration (OSHA) regulations (1910.1002 to 1910.1090) presented under 29 U.S. Code of Federal Regulations (CFR) 1910 do not apply to this material or its components.

Other EPA Regulations

No additional information available

Department of Transportation (DOT)

Other than the normal shipping instructions and information given in this MSDS, there are no other specific U.S. Department of Transportation (DOT) regulations governing the shipment of this material.

State Regulations:**California Safe Drinking Water and Toxic Enforcement Act of 1988 - Proposition 65**

This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition.

California South Coast Air Quality Management District (SCAQMD) Rule 403.1 (VOC's)

Not applicable

Consumer's Right to Know Substance List (MSL) (105 CBR 678.000)

Extremely Hazardous Substances (EHS-MSL) must be identified when present in materials at levels greater than state specified criterion. The criterion is $\geq 0.0001\%$. Hazardous Substances (HS-MSL) on the MSL must be identified when present in materials at greater than the state specified criterion. The criterion is $\geq 1\%$. Components with CAS numbers present in this material, at levels specified in Section 9 - Components, do not require reporting under the statute.

New Jersey Registration

The New Jersey, Registry 3, Registration law does not apply to this material, as none of its components are trade secrets.

Pennsylvania Right to Know Hazardous Substance List

Special Hazardous Substances (PA-SHS) must be identified when present in materials at levels greater than the state specified criterion. The criterion is $\geq 0.01\%$. Hazardous Substances (PA-HS) must be identified when present in materials at levels greater than the state specified criterion. The criterion is $\geq 1\%$. Environmental Hazards (PA-EH) must be identified when present in materials at levels greater than the state specified criterion. The criterion is $\geq 0.01\%$. Components with CAS numbers present in this material, at levels specified in Section 9 - Components, do not require reporting under the statute.

DEC-04-1995 15:27 FROM PROC CUST SERVICE

L 512 253 52744



ARCOL POLYOL E-434

MSDS No. R0233-1-1-001a-02
Ver. R0 3
Ver. Date NOV 30 94

Regulatory Advisory
If you reformulate or further process this material, you should consider re-evaluation of the regulatory status of the components listed in this sheet.

DEC-04-1995 13:22 FROM ARCO CUST SERVICE

1 512 331 54722



ARCO® POLYOL E-434

MSDS No. P000321-1-03NA-JE
Ver. No. 2
Ver. Date NOV 30 94

16. Label Information

Manufacturer ARCO Chemical Company 3801 West Chester Pike Newtown Square, PA 19073-3287		Telephone Numbers: EMERGENCY 800/424-8300 CHENTREC 810/363-8300 ARCO CHEM CUSTOMER SERVICE 800/321-7000 INFO ONLY	
Other Company Names None		Signal Word CAUTION	
Use Statement For industrial use only Keep out of reach of children			
Physical Hazards Combustible	Health Hazards Eye Irritant		
Precautionary Measures Avoid contact with eyes Do not handle near heat, sparks, or open flame Keep container tightly closed when not in use Remove spillage immediately from any hard, smooth working areas Wipe out or wash on or near this container. Do not pressurize Observe all label warnings, especially during emergency cleaning Refer to all federal, state, and local regulations prior to disposition of container and unused contents by reuse, recycling, or disposal			
DOT Intermittent:	UNNA ID No. Not regulated	DOT Hazard Class Not regulated	DOT Packing Group Not regulated
DOT Hazardous Material Proper Shipping Name Not regulated		DOT RQ (based on quantity) Not regulated	
Consistent Name Propylene Oxide, Polymer with Ethylene Oxide and Glycerol		CAS No. 9002-25-2	Concentration Amount (PPM) AP 100 %
		RQ Not applicable	
Reactions: In case of fire, use: Dry chemical, CO ₂ , Foam			
First Aid:	Inhalation Not expected to present a significant inhalation hazard under anticipated conditions of normal use.		
	Eye Contact In case of eye contact, immediately rinse with clean water for 20-30 mins/hrs. Remove eye lids often. Obtain emergency medical attention if pain, burning, tears or redness persist.		
	Skin Contact Not expected to present a significant skin hazard under anticipated conditions of normal use.		
	Ingestion Ingestion unlikely. However, if ingested, obtain emergency medical attention.		
In case of spill: Slippery walking. Spread granular cover. Prevent flow to sewer/public waters.			
Protective Equipment Respiratory Where excessive vapor, mist, or dust may result from use, use U.S. National Institute for Occupational Safety and Health (NIOSH) U.S. Mine Safety and Health Administration (MSHA) approved respiratory protection equipment.			
Eye Chemical splash goggles and/or face shield should be worn			
Skin PVC-coated gloves should be worn			
Label No.: 1 P000321		Version No.: 2	Date: 5 December 1994

DEC-24-1995 13:28 FRY 9901 CLST SERVICE

1 502 353 647221



ARCOL® POLYOL E-434

MSDS No P000301-1-0546-A2
Ver. No 2
Ver. Date NOV 30 94**17. General Comments****General Comments**

Warning: hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as autoignition or ignition temperatures. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time, and are influenced by pressure changes. Ignition may occur at typical elevated temperature process conditions, especially in processes operating under vacuum if subjected to sudden ingress of air, or outside process equipment operating under elevated pressure if sudden escape of vapors or mists to the atmosphere occurs. Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

Other Comments

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the material itself.

Note	EQ=Equal	AP=Approximately	N/P=No Applicable Information Found
Qualifications:	LT=Less Than	UK=Unknown	N/A=Not Applicable
	GT=Greater Than	TR=Trace	NDA=No Data Available

DISCLAIMER OF LIABILITY:

Information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

This MSDS was prepared and is to be used only for this material. If the material is used as a component in another material, this MSDS information may not be applicable. This document is generated for the purpose of distributing health, safety, and environmental data. It is not a specification sheet nor should any displayed data be construed as a specification. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself.

Print Date 9 February 1995

Document Status APPROVED

100-12-150 0713 1002 HALL 10

TEL 1001-210-413-1403

#107 P02

PRODUCT CODE: 3019

Material Safety Data Sheet

Pfizer Inc.
235 East 42nd Street
New York, NY 10017

Product: Limestone - Lucerne
Valley

MSDS No: MINERAL / MINO10
Revised: 03
Date: June, 1988

F-210

National Paint
and Coatings
Association

Hazardous Material
Identification
System

HEALTH HAZARD	1 - Slight
FLAMMABILITY HAZARD	0 - Minimal
REACTIVITY HAZARD	0 - Minimal
PERSONAL PROTECTION	1 - Goggles, Gloves, Dust Mask

SECTION I. MATERIAL IDENTIFICATION

Trade/Material Name: Limestone - Lucerne Valley

CaCO₃

Description: Limestone, Calcium Carbonate

Other Designations: Vicron 10-20, Vicron 15-15, Vicron 25-11, Vicron 31-6, Vicron 41-8, Vicron 45-3, Vicron 80, Vicron 200, Marblewhite 326, Marblewhite 328, Marblewhite 302, Marblewhite 125, Marblewhite 80, Marblewhite 30, Marblewhite -14-40, Calcium 188, 30, Calcium Grits #4, Calcium Grits #9, Calcium Grits #69, Poultry Blend, Viroc #1, Viroc #2, Viroc #3, Glass Limestone, Vical 5075, Vical 2000, Vical 3000, Vical 4000, Vical 4030, Marblemix

CDS: 1317-65-3

Chemical Name: CaCO₃

Manufacturer: Pfizer Inc.
235 East 42nd Street
New York, NY 10017

Phone: (619) 249-7334 (Lucerne
Valley, CA Plant)

SECTION II. INGREDIENTS AND HAZARDS

Ingredient Name	CDS Number	Percent	Exposure Limits
Limestone	1317-65-3		ACSDH TLV: 10 mg/m ³ , Total Dust OSHA PEL: 5 mg/m ³ , Respirable: 1.5 mg/m ³ Total Dust

There are extremely small, but detectable amounts of substances regulated under California's Safe Drinking Water and Toxic Enforcement Act (Proposition 65).

Arsenic - less than 2 ppm
Cadmium - less than 2 ppm
Chromium (VI) - less than 0.1 ppm
Lead - 4-6 ppm

These levels are "typical" quantities and may change slightly with different lots.

pg 1

INGREDIENTS AND HAZARDS continues on page 2

Page 1

Distributors



The C.P. Hall Company

Chicago, Illinois 60641 - 7800 South Central Ave. - 312-707-4200
Alameda, Tennessee 38012 - P.O. Box 12000 - 601-546-9940
P.O. Box 12111 - 4402 Jackson Drive - 216-409-0011
Tomball, California 94566 - 415-460-4100 - 312-707-4200

Material Safety Data Sheet

MEMO No: MINERAL / MINIO
 Raylaigra 03
 DATED 14TH 1998

INGREDIENTS AND HAZARDS continued from page 1

The term "less than" indicates that the substance was detected, but the amount was less than the quantifiable limit.

Section 313 Supplier Information

This product does not contain toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

SECTION III. PHYSICAL DATA

Appearance & Color: White powder, no odor

Specific gravity (H₂O-1): 2.6-2.8

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point (method): Non-Flammable

Extinguishing Media: Non-flammable. As appropriate for surrounding combustibles.

Unusual fire or explosion hazards: None

Special fire-fighting procedures: None

SECTION V. REACTIVITY DATA

Material is stable ~~Monomer~~ polymerization will not occur

Chemical Incompatibilities Reacts with acids to liberate carbon dioxide gas.

Conditions too variable Name known

Hazardous decomposition products: None

APP-19-180 07/11 10:08 AM 10

TEL 610-261-1000 FAX 610-261-1001

EPA 100-100

Material Safety Data Sheet

Refiner Inc.
239 East 42nd Street
New York, NY 10017

Product: LIMESTONE - LUCERNE
VALLEY

MSDS Nos MINERAL / MIN010
Revisions: 03
Date: June, 1988

SECTION VI. HEALTH HAZARD INFORMATION

Summary of risks: Calcium Carbonate is a "Nuisance Particulate". They "have a long history of little adverse effect on lungs and do not produce significant organic disease or toxic effect when exposures are kept under reasonable control" (ACGIH TLV definition). May cause eye and skin irritation from abrasion.

Primary entry route(s): Inhalation, skin and eye contact and ingestion.

Acute effects: Abrasiveness may cause eye and skin irritation.

Chronic effect(s): No known chronic health effects.

First aid:

Eye contact: Flush eyes with plenty of water for at least 15 minutes.
If irritation persists, seek medical attention.

Skin contact: Wash from skin with mild soap and water.

Inhalation: Remove from the exposure area.

Ingestion: Ingestion should not cause any significant health problems. If a large amount is ingested and if conscious, give large quantities of water to induce vomiting. Get medical attention.

SECTION VII. SPILL, LEAK AND DISPOSAL PROCEDURES

Spill / Leak procedures: Those involved in cleanup of spills should use respiratory protection for airborne dust. Vacuum or scoop up spilled material for recovery or disposal, avoiding dusting conditions and using good ventilation. Wetting the spill with a water spray may help to keep the airborne dust levels down.

Waste management / Disposal: Calcium Carbonate is not considered to be a RCRA hazardous waste and may be disposed in a site suitable for industrial wastes. Refer to any local, State or Federal regulations for specific disposal information.

For transportation emergencies, call CHEMTREC, 24 hour information service, 1-800-424-9300.

Material Safety Data Sheet

Pfizer Inc.
233 East 42nd Street
New York, NY 10017

Product: LIMESTONE - LUCERNE
VALLEY

MSDS No: MINERAL / MINO10
Revision: 03
Date: June, 1993

SECTION VIII. SPECIAL PROTECTION INFORMATION**Personal protective equipments**

Goggles: Safety glasses or dust-tight goggles.

Gloves: Leather or rubber gloves.

Respirators: If exposure limits are exceeded, a NIOSH approved dust respirator should be used.

Workplace considerations

Ventilation: Provide adequate exhaust ventilation to meet TLV requirements. An exhaust filter system may be required to avoid environmental contamination.

Safety stations:

An eyewash station should be available to the area of use.

SECTION IX. SPECIAL PRECAUTIONS

Other precautions: Good industrial hygiene practice requires that employee exposure be maintained below the recommended TLV. This is preferably achieved through the provision of adequate ventilation where necessary. Where dust cannot be controlled in this way, personal respiratory protection should be employed.

DOT Class: Not regulated.

Prepared/Revised by: M. S. Linsen

January, 1993

The data and recommendations presented herein are based upon a review of Pfizer files, published MSDS's, and standard toxicological reference sources. Pfizer Inc. makes no guarantee or warranty, either express or implied as to the accuracy or completeness of these data and recommendations.

OFF-18-189 07122 1010P Hall 10

6-1012-1409-13-0403

2001 P06



**MINERALS, PIGMENTS
& METALS DIVISION**
238 EAST 42nd STREET, NEW YORK, N.Y. 10017

MARBLEWHITE® GROUND LIMESTONE (WESTERN)

MARBLEWHITE® Ground Limestone products are high purity extenders (fillers) of carefully controlled particle size. They are manufactured from selected natural oxides which is processed in modern plant facilities at Laramie Valley, California. The most up-to-date equipment has been designed and installed to assure uniform and consistent control of product quality. The Marblewhite line has been engineered to contribute specific physical properties to paint, adhesive, plastic, putties, rubber, cement, and other related products as noted below.

Marblewhite Ground Limestone products are available in a range of controlled particle of size from 10 mesh to 325 mesh. Typical properties and uses for these materials are described below:

USES OF MARBLEWHITE

Marblewhite ground limestone products find application in a wide variety of end uses where a low gravity, low oil absorption, readily dispersed pigment of controlled fineness with good whiteness is required. A few uses are:

- Adhesives
- Building Products
- Coating Compounds
- Colored Papers
- Floor Tiles
- Plastics
- Polishing Compounds
- Putties
- Rubber
- Stucco

CHEMICAL COMPOSITION - (typical)

Calcium Carbonate	CaCO_3	98.0%
Magnesium Carbonate	MgCO_3	0.9%
Silicon Dioxide	SiO_2	0.2%
Aluminum Oxide	Al_2O_3	0.1%
Iron Oxide	Fe_2O_3	0.000%
Manganese		0.2% Max.
Loss on Ignition		42.4%

All information given and recommendations made herein are based upon our research and are believed to be accurate, but no guarantee, either expressed or implied, is made with respect thereto or with respect to the independence of any patent. Our products are sold on the understanding that the user is solely responsible for determining their suitability for any purpose. This information is not to be used in any way to infringe upon the rights of others or to make any other use without written permission from Pb Co.

TR-245
TYFIZEN 1987

MARBLEWHITE® GROUND LIMESTONE (WESTERN)

PHYSICAL PROPERTIES- (typical)

pH Value	9.8
Specific Resistance-Osmos	23,000
Specific Gravity	2.71
Weight per Solid Gallon	22.87
One Pound Solids-gal.	0.04431
Hardness-Mash scale	3.0
Particle Shape	Rhombic

GRADE

	325	200	100	60	30	10-40
Dry Brightness	84	83	88	81	84	73
Tapped Density-lb./cu. ft.	81.7	103.3	107.7	108.8	112.8	104
g/cc	1.67	1.84	1.73	1.76	1.81	1.67
Apparent Density-lb./cu. ft.	41.8	48.7	60.0	61.8	74.8	*
g/cc	.67	.78	.96	.99	*	*
Oil Absorption	13	12	*	*	*	*
+325 Mesh (retained on)	1% Max.	*	*	*	*	*
+200 Mesh (retained on)	*	3% Max.	*	*	*	*

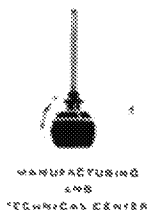
Particle Size Distribution - (typical-Sedigraph Method)**% by Weight Below Indicated Size****Grades**

Diameter Microns	Marbwhite 325	Marbwhite 200
80	100	84
40	88	88
30	68	83
10	37	30
5	21	19
3	13	13
1	8	8

% by Weight Retained-Cumulative

	Grade				
U.S. Sieve Size	NW 120	NW 80	NW 60	NW 30	NW 10-40
12	*	*	*	*	0
30	*	*	0.2	1.0	89
40	*	*	1.3	12	97
60	*	*	5	38	*
70	1	*	10	42	*
100	3	19	19	84	*
200	25	37	41	74	*
325	*	38	*	*	*

AUG 15 1994



The C.P. Hall Company

Chemicals for Industry Since 1919

5851 WEST 73RD STREET

P.O. BOX 810

BEDFORD PARK, ILLINOIS 60499-0910

(708) 284-5000
FAX (708) 426-0828

August, 1994

Dear Customer:

Enclosed is an updated Material Safety Data Sheet for the product that we have supplied to you. We ask that you discard all previous versions and use the attached.

We strongly suggest that you make this information readily available to your employees and customers who may handle this product.

IF, AS THE RECIPIENT OF THIS LETTER, YOU ARE NOT THE PERSON IN YOUR ORGANIZATION RESPONSIBLE FOR THE MAINTENANCE AND DISTRIBUTION OF MSDS SHEETS, PLEASE FORWARD THIS DATA SHEET TO THE RESPONSIBLE INDIVIDUAL.

Sincerely,

Cathy Bresnahan
Regulatory Affairs
Supervisor

HN

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
Telephone (610) 481-4911



MATERIAL SAFETY DATA SHEET

SECTION 1 - MATERIAL IDENTIFICATION

PRODUCT NAME 1,4 BUTANEDIOL

PRODUCT CODE 14BD0

MSDS REVISION NUMBER 3

MANUFACTURER Air Products and Chemicals, Inc. 7201
Hamilton Blvd., Allentown, PA 18195-1501

TELEPHONE NUMBER 800-345-3148

EMERGENCY TELEPHONE NUMBER(S)
800-523-9374 (Continental U.S.)
610-481-7711 (Outside Continental U.S.)

DATE PREPARED JULY 1996

EMERGENCY OVERVIEW

HMIS HEALTH RATING 1 FLAMMABILITY 1 REACTIVITY 0

PHYSICAL FORM Mobile liquid

COLOR Colorless

ODOR Odorless

HAZARDS Harmful if swallowed. Mild eye irritant. Mild
skin irritant.

EXTINGUISHING MEDIA Ignition will give rise to a Class B fire. In
case of large fire use: Alcohol Foam, Water
Spray. In case of small fire use: Carbon Dioxide
(CO2), Dry Chemical, Dry sand or limestone.

C.A.S. CHEMICAL NAME 1,4-BUTANEDIOL

SYNONYMS 1,4-Butanediol 1,4-Butylene Glycol 1,
4-Dihydroxybutane 1,4-Tetramethyleneglycol

CHEMICAL FAMILY Glycols

EMPIRICAL FORMULA C4 H10 O2

INTENDED USE Reactive Diluent

REVISION NOTES New MSDS Format. Updated Physical Data.

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
Telephone (610) 481-4811



SECTION 2 - INGREDIENTS

#	%	CAS Number and Chemical Name
---	---	------------------------------

1.	100.00	110-63-4 1,4-BUTANEDIOL
----	--------	-------------------------

OSHA (ACGIH) EXPOSURE LIMITS

	TWA ppm	mg/m3	STEL ppm	mg/m3	CEILING ppm	mg/m3
1. OSHA	N/E	N/E	N/E	N/E	N/E	N/E
ACGIH	N/E	N/E	N/E	N/E	N/E	N/E

N/E = Not Established.

SECTION 3 - HEALTH HAZARDS

ROUTES OF EXPOSURE

- Eye Contact
- Skin Contact
- Ingestion
- Skin Absorption

EXPOSURE STANDARDS

No standards established for the product. Maintain air contaminant concentrations in the workplace at the lowest feasible levels.

HEALTH HAZARDS

- Harmful if swallowed.
- Mild eye irritant.
- Mild skin irritant.

TARGET ORGANS

- Central nervous system

SIGNS AND SYMPTOMS OF EXPOSURE (Acute effects)

- Contact with eyes causes mild irritation and discomfort. Contact with skin causes mild irritation and discomfort. Inhalation of mists may cause irritation in the respiratory tract.
- Ingestion may cause death unless treated promptly.
- Product is absorbed through the skin and may cause nausea, headache and general discomfort.

SIGNS AND SYMPTOMS OF EXPOSURE (Possible Longer Term Effects)

- Repeated and/or prolonged exposures may result in: nervous system disorders (such as narcosis, behavioral changes or decrease in motor function), muscular dysfunction.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
Telephone (610) 481-4911



Neurological disorders

CARCINOGENS UNDER OSHA, ACGIH, NTP, IARC, OTHER

This product contains no carcinogens in concentrations of 0.1 percent or greater.

SECTION 4 - FIRST AID

EYE CONTACT

Hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes.

SKIN CONTACT

Wash affected area with soap and water. Remove contaminated clothing and shoes.

INHALATION

Move patient to fresh air. If breathing has stopped or is labored give assisted respiration (e.g. mouth-to-mouth). Prevent aspiration of vomit. Turn victim's head to the side. Seek medical advice.

INGESTION

If swallowed, call a physician immediately. Note to Physicians: Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE AND EXPLOSION DATA

FLASH POINT (closed cup) 155.00 C (311.00 F)

UPPER EXPLOSION LIMIT (UEL) No Data

LOWER EXPLOSION LIMIT (LEL) No Data

AUTOIGNITION TEMPERATURE No Data

FIRE HAZARD CLASSIFICATION (OSHA/NFPA)
Class IIIB

EXTINGUISHING MEDIA

Ignition will give rise to a Class B fire. In case of large fire use: Water Spray, Alcohol Foam. In case of small fire use: Carbon Dioxide (CO₂), Dry Chemical, Dry sand or limestone.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters should wear butyl rubber boots, gloves, and body suit and a self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS

May generate toxic or irritating combustion products.
May generate carbon monoxide gas.

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
Telephone (610) 481-4911



SECTION 6 - ACCIDENTAL RELEASE MEASURES

CONTAINMENT TECHNIQUES (Removal of ignition sources, diking etc)

Stop the leak, if possible. Reduce vapor spreading with a water spray. Shut off or remove all ignition sources. Construct a dike to prevent spreading.

CLEAN-UP PROCEDURES

If recovery is not feasible, admix with dry soil, sand or non-reactive absorbent (sodium bisulfate) and place in a container or dumpster pending disposal. Transfer to containers by suction, preparatory for later disposal. Flush area with water spray. Clean-up personnel must be equipped with self contained breathing apparatus and butyl rubber protective clothing. For large spills, recover spilled material with a vacuum truck.

OTHER EMERGENCY ADVICE

Wear protective clothing, boots, gloves, and eye protection.

SECTION 7 - HANDLING AND STORAGE

STORAGE

Keep away from: oxidizers. Keep in cool, dry, ventilated storage and in closed containers. Do not store in iron or other reactive metal containers.

HANDLING

Avoid contact with skin or eyes. When handling, do not eat, drink, or smoke. Limit steam pressure for heating tank cars, tank trucks and storage tanks to 40 psig to avoid possibility of overheating.

OTHER PRECAUTIONS

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations (e.g. OSHA).

SECTION 8 - PERSONAL PROTECTION/EXPOSURE CONTROLS

EYE PROTECTION

Chemical safety glasses.

HAND PROTECTION

Neoprene rubber gloves. Nitrile rubber gloves.

RESPIRATORY PROTECTION

Not required under normal conditions.

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18185-1501
Telephone (610) 481-4911



PROTECTIVE CLOTHING

Long sleeved clothing.

ENGINEERING CONTROLS

No specific controls needed.

WORK AND HYGIENIC PRACTICES

Provide readily accessible eye wash stations and safety showers.

SECTION 9 - TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM	Mobile liquid
COLOR	Colorless
ODOR	Odorless
pH	No Data
VAPOR PRESSURE (mm Hg at 21C (70F))	<1.00
VAPOR DENSITY (Air = 1)	No Data
BOILING POINT	228.00 C (442.40 F)
MELTING POINT	No Data
SOLUBILITY IN WATER	Completely (100%)
SPECIFIC GRAVITY (Water = 1)	1.01
MOLECULAR WEIGHT	No Data

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY

Stable

CONDITIONS TO AVOID (if unstable)

Not applicable

INCOMPATIBILITY (Materials to Avoid)

Oxidizing Agents (i.e. perchlorates, nitrates etc.). Reactive metals (i.e. sodium, calcium, zinc etc.). Sodium or Calcium Hypochlorite. Dehydrating Agents. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Materials reactive with hydroxyl compounds.

HAZARDOUS DECOMPOSITION PRODUCTS (from burning, heating, or reaction with other materials).

Carbon Monoxide in a fire. Carbon Dioxide in a fire. Irritating and toxic fumes at elevated temperatures. Tetrahydrofuran. Aldehydes.

HAZARDOUS POLYMERIZATION

Will not occur

CONDITIONS TO AVOID (if polymerization may occur)

Not applicable

Air Products and Chemicals, Inc.
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SECTION 11 - TOXICOLOGICAL PROPERTIES

ACUTE ORAL TOXICITY (LD50, RAT)

1780.00 mg/kg

ACUTE DERMAL TOXICITY (LD50, RABBIT)

No Data

ACUTE INHALATION TOXICITY (LC50, RAT)

>15.00 mg/L / 4 hr (No deaths)

OTHER ACUTE EFFECTS

No Data

IRRITATION EFFECTS DATA

Irritation data based on estimates.

CHRONIC/SUBCHRONIC DATA

Toxic effects described in animals from exposure by ingestion include; narcosis, constriction of pupils, and death due to central nervous system paralysis.

SECTION 12 - ECOLOGICAL INFORMATION

No Data

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Comply with all Federal, State and Local Regulations.

SECTION 14 - TRANSPORT INFORMATION

DOT NON-BULK SHIPPING NAME Chemicals, N.O.I. - Not DOT Regulated

IMO SHIPPING DATA Chemicals, N.O.I. - Not IMO Regulated

ICAO/IATA SHIPPING DATA Chemicals, N.O.I. - Not IATA Regulated

SECTION 15 - REGULATORY INFORMATION

US FEDERAL REGULATIONS

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TOXIC SUBSTANCES CONTROL ACT (TSCA)-

All components are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es)
None

EPA SARA Title III Section 312 (40CFR370) hazard class
None

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are
None

STATE REGULATIONS

PROPOSITION 65 SUBSTANCES (component(s) known to the State of California to cause cancer and/or reproductive toxicity and subject to warning and discharge requirements under the "Safe Drinking Water and Toxic Enforcement Act of 1986")
None

NEW JERSEY TRADE SECRET REGISTRY NUMBER(S)
None

SECTION 16 - INTERNATIONAL REGULATIONS

CANADA

DSL

Included on Inventory.

WHMIS HAZARD CLASSIFICATION

None

WHMIS TRADE SECRET REGISTRY NUMBER(S)

None

WHMIS HAZARDOUS INGREDIENTS

None

WHMIS SYMBOLS

None

EUROPEAN ECONOMIC COMMUNITY (EEC)

EINECS MASTER INVENTORY

Included on Inventory.